Small Business Innovation Research

Multi-Stage Integrated Direct-Current SQUID Array Amplifiers for Cryogenic Detector Arrays

HYPRES, Inc.
Elmsford, NY

INNOVATION

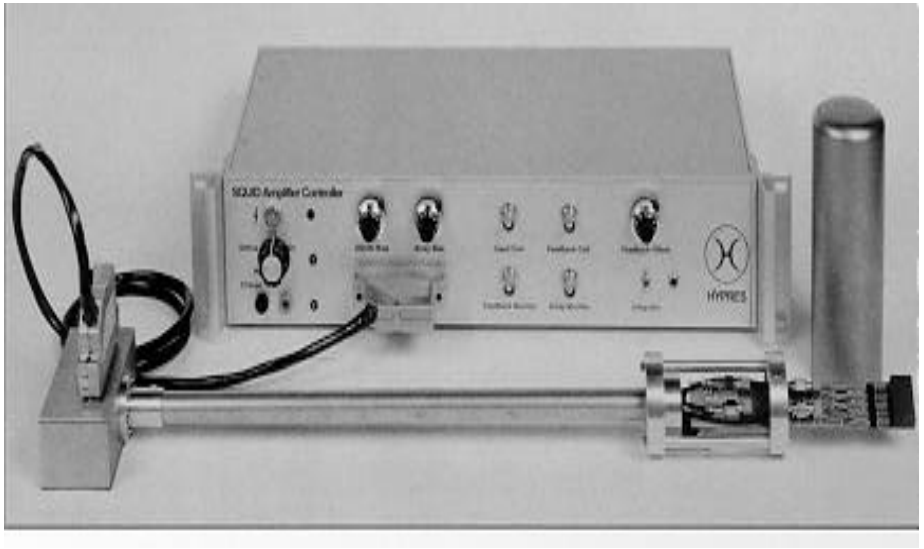
Integrated a sensitive analog SQUID with a SQUID array to eliminate the bulky transformer of conventional SQUIDs

ACCOMPLISHMENTS

- Development of a low noise ultra-low power amplifier with less than 2 pA/ Hz sensitivity and 2 MHz bandwidth.
- Offers ease of readout and low noise characteristics for measuring currents in low or zero (superconducting) impedance loads.

COMMERCIALIZATION

- Developed complete low noise amplifier system.
- Developed amplifier chips for cryogenic detectors.
- Sales realized from the beginning of the Phase II program.
- Sales to date for chips and systems total $99K.



Two stage DC SQUID array amplifier system

GOVERNMENT/SCIENCE APPLICATIONS

- Amplifiers in use at NASA Goddard Space Flight Center and at NIST, Boulder, CO for infrared bolometers.
- Readout of particle detectors.
- Magnetometry.
- Non-destructive evaluation.
- Scheduled for NASA SOPHIA flight in 2001.

Goddard Space Flight Center

1993 Phase 2, SS-111, 2/23/98

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